What Is Claimed Is:

1. A vector capable of tissue-specific replication comprising:

a tissue-specific transcriptional regulatory sequence operably linked to the coding region of a heterologous gene that is essential for replication of said vector.

2. The vector of claim 1, wherein the transcriptional regulatory sequence is selected from the group consisting of promoters and enhancers.

3. The vector of claim 2, wherein said promoter is selected from the group consisting of α-fetoprotein, DF3, tyrosinase, CEA, surfactant, and ErbB2.

4. The vector of claim 1, wherein said vector is a DNA tumor viral vector.

5. The ~~method~~ vector of claim 4, wherein said DNA tumor viral vector is selected from the group consisting of *Herpesvirus*, Papovavirus, papillomavirus, and hepatitis virus.

6. The vector of claim 5, wherein said DNA tumor viral vector is an adenovirus vector.

7. The vector of claim 6, wherein said coding region is selected from the group consisting of E1a, E1b, and E2 and E4 coding regions.

8. The vector of claim 1, wherein said vector contains a heterologous coding sequence that is capable of being expressed from said vector.

9. A method for distributing a polynucleotide in a tissue *in vivo*, comprising introducing a replication-conditional vector containing said polynucleotide into said tissue, wherein said vector contains a gene essential for vector replication, the coding region of which gene is operably linked to a heterologous transcriptional regulatory sequence that functions specifically in said tissue so that replication of the vector occurs in said tissue and not in a tissue in which said transcriptional regulatory sequence does not function.

10. The vector of claim 9, wherein the transcriptional regulatory sequence is selected from the group consisting of promoters and enhancers.

11. The vector of claim 10, wherein said promoter is selected from the group consisting of α-fetoprotein, DF3, tyrosinase, CEA, surfactant, and ErbB2.

12. The method of claim 9, wherein said tissue is tumor tissue.

13. The method of claim 9, wherein said vector is a DNA tumor viral vector.

14. The method of claim 13, wherein said DNA tumor viral vector is selected from the group consisting of *Herpesvirus*, Papovavirus, papillomavirus, and hepatitis virus.

15. The method of claim 14, wherein said vector is an adenovirus vector.

16. The method of claim 15, wherein said coding region that is operably linked to said transcriptional regulatory sequence is selected from the group consisting of E1a, E1b, E2, and E4 coding regions.

17. The method of claim 9, wherein said vector encodes a heterologous gene product, and wherein said vector expresses said heterologous gene product in the cells of said tissue.

18. The method of claim 17, wherein said heterologous gene product provides anti-tumor activity in the cells of said tissue.

19. A cell containing a vector capable of tissue-specific replication, said vector comprising

a tissue-specific transcriptional regulatory sequence operably linked to the coding region of a heterologous gene that is essential for replication of said vector, wherein said transcriptional regulatory sequence functions in said cell so that replication of the vector occurs in said cell.

20. The isolated cell of claim 19, wherein said transcriptional regulatory sequence is selected from the group consisting of promoters and enhancers.

21. The isolated cell of claim 20, wherein said promoter is selected from the group consisting of α-fetoprotein, DF3, tyrosinase, CEA, surfactant, and ErbB2.

22. The isolated cell of claim 19, wherein said cell is a tumor cell.

23. The isolated cell of claim 19, wherein said vector is a DNA tumor viral vector.

24. The isolated cell of claim 23, wherein said DNA tumor viral vector is selected from the group consisting of *Herpesvirus*, Papovavirus, papillomavirus, and hepatitis virus.

25. The isolated cell of claim 24, wherein said vector is an adenovirus vector.

26. The isolated cell of claim 25, wherein said coding region that is operably linked to said transcriptional regulatory sequence is selected from the group consisting of E1a, E1b, E2, and E4 coding regions.

27. The isolated cell of claim 19, wherein said vector encodes a heterologous gene product, and wherein said vector expresses said heterologous gene product in the cells of a target tissue.

28. The isolated cell of claim 27, wherein said heterologous gene product provides anti-tumor activity in the cells of said tissue.

29. A method of producing a vector capable of tissue-specific replication, said vector comprising a tissue-specific transcriptional regulatory sequence operably linked to the coding region of a heterologous gene that is essential for replication of said vector, comprising culturing the cell of claim 19 and recovering said vector from said cell.

30. A cell containing a virion capable of tissue-specific replication, said virion comprising

a tissue-specific transcriptional regulatory sequence operably linked to the coding region of a gene that is essential for replication of said virion, wherein said transcriptional regulatory sequence functions in said cell so that replication of the virion occurs in said cell.

31. The isolated cell of claim 30, wherein said transcriptional regulatory sequence is selected from the group consisting of promoters and enhancers.

32. The isolated cell of claim 31, wherein said promoter is selected from the group consisting of α-fetoprotein, DF3, tyrosinase, CEA, surfactant, and ErbB2.

33. The isolated cell of claim 30, wherein said cell is a tumor cell.

34. The isolated cell of claim 30, wherein said virion is a DNA tumor viral virion.

35. The isolated cell of claim 34, wherein said DNA tumor viral virion is selected from the group consisting of *Herpesvirus*, Papovavirus, papillomavirus, and hepatitis virus.

36. The isolated cell of claim 35, wherein said virion is an adenovirus virion.

37. The isolated cell of claim 36, wherein said coding region that is operably linked to said transcriptional regulatory sequence is selected from the group consisting of E1a, E1b, E2, and E4 coding regions.

38. The isolated cell of claim 30, wherein said virion encodes a heterologous gene product, and wherein said virion expresses said heterologous gene product in the cells of a target tissue.

39. The isolated cell of claim 38, wherein said heterologous gene product provides anti-tumor activity in the cells of said tissue.

40. A method of producing a virion capable of tissue-specific replication, said virion comprising a tissue-specific transcriptional regulatory sequence operably linked to the coding region of a heterologous gene that is essential for

replication of said virion, comprising culturing the cell of claim 30 and recovering said virion from said cell.